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14. ABSTRACT

Purpose: The purpose of this study was to gain better understanding of the military medics' [Navy Independent Duty Corpsman, (IDC), Air Force Independent Duty Medical Technician (IDMT), Army Health Care Specialist, (68W)] experiences providing healthcare for women in the deployed or ship setting.

Design: An exploratory descriptive design informed by ethnography. Methods: One-time focus group or individual interviews. Sample: A total of 86 IDMT, IDC, 68W and one Coast Guard medic were recruited from a DoD medic conference and local military instillations. Analysis: A constant comparative method reduced data into three themes. Findings: The three themes identified were: Training Fidelity, Advocate Leader, and The Challenges of Providing Patient Care. Training fidelity referred to foundational education courses through skills sustainment training. This theme was central to analysis as all education and training is intended to prepare medics for deployment. Advocate Leader refers to actions taken by medics to ensure the health and welfare of women. Though there were few women in forward deployed or ship settings, medics protected private health information, ensured gynecological medical supplies were available, and educated leaders about healthcare needs. The Challenges of Providing Patient Care theme included any reference to the delivery of health care in the deployed or ship setting. Deployment experience has convinced a number of medics that they needed additional women's healthcare training. They suggested training be provided in a step-wise fashion, beginning with initial, technical training courses and continuing through medical skills sustainment platforms. Implications for Military Nursing: Medics are an excellent conduit for reinforcing healthy messages and providing first line treatment to deployed military women. Nurses have been and continue to be an integral part of the exceptional training for medics. Nurses who specialize in women's health should seek opportunities to train medics at initial educat

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Abstract

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Purpose: The purpose of this study was to gain better understanding of the military medics' [Navy Independent Duty Corpsman, (IDC), Air Force Independent Duty Medical Technician (IDMT), Army Health Care Specialist, (68W)] experiences providing healthcare for women in the deployed or ship setting.

Design: An exploratory descriptive design informed by ethnography.

Methods: One-time focus group or individual interviews.

Sample: A total of 86 IDMT, IDC, 68W and one Coast Guard medic were recruited from a DoD medic conference and local military instillations.

Analysis: A constant comparative method reduced data into three themes.

Findings: The three themes identified were: Training Fidelity, Advocate Leader, and The Challenges of Providing Patient Care. Training fidelity referred to foundational education courses through skills sustainment training. This theme was central to analysis as all education and training is intended to prepare medics for deployment. Advocate Leader refers to actions taken by medics to ensure the health and welfare of women. Though there were few women in forward deployed or ship settings, medics protected private health information, ensured gynecological medical supplies were available, and educated leaders about healthcare needs. The Challenges of Providing Patient Care theme included any reference to the delivery of health care in the deployed or ship setting. Deployment experience has convinced a number of medics that they needed additional women's healthcare training. They suggested training be provided in a step-wise fashion, beginning with initial, technical training courses and continuing through medical skills sustainment platforms.

Implications for Military Nursing: Medics are an excellent conduit for reinforcing healthy messages and providing first line treatment to deployed military women. Nurses have been and continue to be an integral part of the exceptional training for medics. Nurses who specialize in women's health should seek opportunities to train medics at initial education, continuing education and clinic opportunities.

Primary Priority	
Force Health Protection:	☐ Fit and ready force☐ Deploy with and care for the warrior☐ Care for all entrusted to our care
Nursing Competencies and Practice:	☐ Patient outcomes ☐ Quality and safety ☐ Translate research into practice/evidence-based practice ☐ Clinical excellence ☐ Knowledge management ☐ Education and training
Leadership, Ethics, and Mentoring:	 ☐ Health policy ☐ Recruitment and retention ☐ Preparing tomorrow's leaders ☐ Care of the caregiver
Other:	
Secondary Priority	
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Other:	

Progress Towards Achievement of Specific Aims of the Study or Project

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Findings related to each specific aim, research or study questions, and/or hypothesis:

The objective of this study was to gain better understanding of the Navy Independent Duty Corpsmen, IDC/Air Force Independent Duty Medical Technician, IDMT/ Army Health Care Specialist, 68W (medics) experiences providing health care for women in the deployed or ship setting. Initially, the team used 152 code words to reduce the data, which further condensed into seven domains. Within the seven domains, using an inductive approach, the team identified the following three themes: Training Fidelity, Advocate Leader, and The Challenges of Providing Patient Care. Training fidelity covered any reference related to medics' initial education as a military medic through skills sustainment training, which was later applied to the deployed health care environment. This theme is central to the analysis of the study given that all education and experience prepares medics for women's health care needs in austere settings. In support of providing quality health care for military women, Advocate Leader refers to actions taken made by medics. When providing women's health care, medics recognized the limits of their education and experience, which contributed to the Challenges of Providing Patient Care.

The manuscript has been submitted to Military Medicine and has been returned for minor revisions.

Study Aim 1: Describe patterns, practices, and experiences of IDC/IDMT/68Ws when delivering women's health care when deployed.

- 1. What are the common health care issues for women seeking medical care when deployed?
- 2. What are the physical conditions under which IDC/IDMT/68W must provide women's health care?
- 3. What preparations during IDC/IDMT/68W pre-deployment training are available to anticipate women's health care needs?

In the deployed setting, the IDC/IDMT/68W reported that women sought care for bacterial vaginosis, dysmenorrhea, urinary tract infection, urinary incontinence, dehydration, sexually transmitted diseases (STDs), pregnancy, and routine pelvic examination. This list of diagnoses the medics described is not unlike what the women stated in previous studies (Wilson & Nelson, 2012). Treatment for women in the deployed environments was limited by the level of care available at the medical facility. Therefore, the medic at the facility may improvise or limit care due to a lack of privacy, equipment, or training preparation. The IDCs reported that lack of space on the vessel, size of the female population on ship caused gynecological equipment to be stored and not easily accessible since female treatment is sporadic. It is important to note that patient care is dependent upon the proximity to echelon III/IV treatment facility for emergencies; however, routine gynecologic care depended upon equipment taken by the medic at remote medical facilities and the scope of their practice. In early phases of the war, medics did not have a set Authorized Medical Allowance List (AMAL) kit that included supplies, medications, or equipment for primary care gynecologic health needs. The procurement of equipment and supplies was influenced by the medic's knowledge about the needs to provide gynecological

care. Medics also learned early in the deployment to forge professional relationships with medics at nearby outpost stations/bases (FOB/COP) regardless of service affiliation. The medic may need to ask for additional supplies/medications from nearby FOB/COPs. IDCs have learned to supplement their deployment materials with additional feminine hygiene and menstruation supplies. IDMTs have reported similar experiences yet the occurrence of an IDMT going to a remote deployed location was less likely compared to IDC. The 68W experienced the same female diagnose seen by IDCs and IDMTs; in addition, 68Ws face the same treatment limits as other medic providers. 68W initial training has limited the medic in pre-deployment preparations and only direct operational experience has made the medic more cognizant of women health concerns and illness in the deployment environment.

Medics reported deploying to environments where they were expected to care for women and did not feel professionally prepared either because of their lack of formal education or experience. There were disparate responses between the three services as far as their preparation to care for women. Navy IDCs appeared to have the highest level of confidence and Army 68W appeared to have the least level of confidence. This observation is not surprising because of the differences in the length and immersion of various topics in their education (see table 1). Confidence was qualitatively determined by the medic stating they could independently manage women's health concerns (within their scope of practice), describing situations they were ready to care for female patients for gynecological concerns, and appropriately packing supplies to care for women during the deployment. Further, while in garrison there was great variability in maintaining experience in direct patient care. In garrison, the Navy IDCs continued to practice caring for their population; Air Force IDMTs may not remain in direct patient care, but remain in the clinic setting; and the Army 68Ws may not work in the hospital or clinic at all. All the service's medics mentioned moving out of patient care at senior enlisted ranks.

Table 1

Medic Education Comparison

	Navy Independent Duty Corpsman (IDC)	Air Force Independent Duty Medical Technician (IDMT)	Army Health Care Specialist (68W)
Prerequisites	14-week hospital corpsman course	Phase 1: 14-week 4N didactic course Phase 2: 6 week clinical laboratories	Minimum score of 101 in aptitude area ST and a minimum score of 107 in aptitude area GT in Armed Services Vocational Aptitude Battery (ASVAB)
Time in Service/Rank Requirements	A minimum of four years active duty and four years in rating. Paygrades E5-E7.	Must be 4N for 3 years with 2 years' direct patient care. Minimum Rank=Senior Airman (E4)	None
Location of medic training	Surface Warfare Medicine Institute, San Diego, California	Medical Education and Training Campus Fort Sam Houston, Texas	Fort Sam Houston, Texas
Length of Training	374 days (nine months didactic and three months of clinical rotations	Fifty day course	16 weeks advanced individual training
Time Spent on Women's Health Issues (at time of interviews)	60 didactic hours and 40 clinical hours	12 hours physical exams 11.5 hours on GU disorders (23.5 hours total)	8 didactic hours
Guidance	OPNAVINST 6400.1C (15 Aug 2007)	Air Force Instruction 44-103 and 4N0X1 CFETP	TRADOC Regulation 350-70

Study Aim 2: Compare and contrast the patterns of IDC/IDMT/68Ws health care practices when managing sex-specific needs of women in the deployed/ship setting verses the home setting.

- 1. What resources do IDC/IDMT/68W use to gather information about diagnosing and treating women in garrison and during deployment?
- 2. Do IDC/IDMT/68W feel prepared to care for women at the deployed or ship setting based on their education and or training?

All medics felt they could use additional education and training in regards to women's health care. On-going or continuing education is limited. Both IDCs and IDMTs used peer-to-peer mentoring, internet searches, physician consult, comprehensive clinical text, reference books, and resources to diagnosis and treat female patients in theater or ship. IDCs and IDMTs have a DoD conference called the Armed Forces Operational Medicine Symposium, which offers women's health continuing education. Since the research findings play an important role in future training needs, we questioned medics about the education IDC and IDMT curriculum for gynecological care. The gap in obstetric and gynecologic education transfers directly into deployed women health care and requires medics to increase their professional knowledge by clinical experience and by reading information as the need arises. 68W have expressed the most concerns about the lack of preparation due to the limited education and lack of experience.

Medics noticed an increased need to care of military women in the deployed and ship setting over the last decade. All three-service branch medics reported their minimal training in women's health limits their capability thereby requiring a referral to higher echelon. Medics reported the need to protect patient privacy during the approval process through the chain of command for referral care. The medics reported the majority of commanders and enlisted leaders understood the need to protect patient privacy, but some of the medics stated they had to remind some of the leaders when pressed to give additional health information.

Study Aim 3: Describe patterns, practices, and experiences of IDC/IDMT/68Ws about military women's illness behaviors in the deployed or ship setting in regards to how do they see women process symptoms, initiate self-care, consult others, and validate the need for medical care.

- 1. What are the illness behaviors of military women as described by the IDC/IDMT/68W?
- 2. What are the resources available for women to manage their sex-specific health needs as described by the IDC/IDMT/68W?

The common diagnostic trends reported by all three-service branch medics were bacterial vaginosis, dysmenorrhea, urinary tract infection, urinary incontinence, dehydration, sexually transmitted diseases (STDs), and pregnancy. Several critical factors that affect deployed women's illness behaviors included setting, availability of supplies, and appropriate bathing facilities.

The resources available for women depended on the location and proximity to a particular treatment facility regarding gynecological health care needs. Beyond treatment care facilities, medics stated that women needed to increase their level of individual preparedness for the mission. An example the medics requested women prepared, taking preventive measures to ensure gynecologic health, or decrease delay in seeking medical care before chronic symptoms manifest.

Patient education was a role medics adopted and implemented to reduce health care utilization. Medics viewed themselves as individuals capable of delivering healthy messages to young and enlisted women. Prior to deployment, Navy IDCs and Army 68Ws discussed how they provided planned or impromptu group health education sessions for women. The messages communicated to women were about general health awareness while deployed (malaria, mental health concerns,

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etc.), and sexual health. The medics believed that the time spent teaching women was an opportunity for their population to see them as a health care resource during deployment. Male and female IDCs felt obligated to educate women about how to conduct themselves on ship.

In a blunt attempt to educate young and enlisted women, medics were able to fill education gaps through what was named the "shock and awe" method by the research team. In an attempt to gain undivided attention of their audience, this method involved presenting graphic pictures pertaining to health conditions, especially when it came to sexually transmitted infections. The medics related to the young women and used vernacular understood by younger women. Medics informed women of how not to conduct themselves on a ship or in the field. The medics closely connected to their patient population provided health classes and warned women to refrain from having multiple sexual partners. Navy IDCs were well aware of the attention young female sailors received from male sailors being new to the ship environment and stated, it's like "blood in the water". This upfront education practice was beneficial to establish trust with women when deployed. Navy IDCs reported that women who engaged in unprotected sexual behaviors felt comfortable asking for emergency contraception.

Medics know the environment women work in and tried to teach them proper health and hygiene in the context of this environment. It was imperative to alert women of the austere environments impact on their health, which prompted further discussion of self-treatment options for women. In some deployed settings, women worked in exceedingly hot environments while wearing thick and heavy clothing that contributed to prolonged female health issues. One male IDC medic recalled a deployment where women were experiencing a high rate of urinary tract infections and educated women on the need to wear underwear and keep their genitals clean because he found out that women working in engineering chose not to wear underwear because of the hot environment.

Study Aim 4: Triangulate study results with an on-going TSNRP ethnographic study regarding women's illness behaviors in the deployed setting.

In the women's study, women stated the infrastructure on deployed installations should to be better suited for the demands of gynecological hygiene health (Wilson & Nelson, 2012). The infrastructure included availability of self-treatment supplies, internet connectivity for ordering supplies, and gynecologic health care. This included a regular and recurring supply of feminine hygiene and showering products at the Post Exchange (PX). Women sought peer-to-peer guidance, self-diagnosis, and self-care strategies to alleviate discomfort and worry. The consultation of the family by the military women was apparent in both studies prior to seeking formal health care. However, younger enlisted were reserved to see a medic due to taboo implicated in pelvic examination in theater.

Medics believed that "experienced" women understood their bodies and understood how to manage their health in the deployed setting. Medics described experience as a major health event (pregnancy or previous gynecologic issue), previous deployment, or age. Medics found that women who received obstetric or gynecologic care in the past were more comfortable with seeking care when deployed or felt more confident to self-manage their symptoms. Medics stated that women who deployed before appeared to anticipate hygiene and health needs and

therefore packed their deployment bags with these needs in mind. Finally, women who were older usually self-treated their usual symptoms or felt more forthcoming seeking health care.

The magnitude of the medic/patient relationship enhances the women's optimal medical readiness and health. Medics, especially male medics, were keenly aware of the sensitive nature of providing healthcare for genitourinary concerns. Male medics admitted rearranging their patient assignments by switching female patients to female medic colleagues for one or all of the following three reasons. First, it was assumed that female medics knew more about women's healthcare simply because they were women. Second, the male medics were uncomfortable or embarrassed about discussing gynecologic topics. Third, there was a sense that the patient was uncomfortable and or embarrassed with a male medic providing gynecologic care. Both the women and the medic described a level of frustration regarding the medical delivery support for appropriate equipment, supplies, availability of specialist, prevention measures, and privacy. Additionally the women and providers trust that pre-deployment measures were taken to ensure gynecological health and maintenance while deployed on ship or an austere setting.

All three-service branch medics have associated the deployed infrastructure limits women in appropriate self-care treatments. The medics observed that the pre-deployment briefings need to better prepare women for the environmental conditions, which they will be stationed as well as level of care given in theater and access to health care products. Women have noted that the lack of pre-deployment briefings about the environment to which they will be deployed limited their knowledge on how to manage gynecologic health. Women sought mentoring from women previously deployed. Medics noted that job performance duties limited appropriate self-care or access to medical care at times due to the mission needs; however, when women delayed care and the symptoms became severe, this delay affected the team, delayed the mission, and put individuals in harm's way.

Effect of problems or obstacles on the results:

There were no obstacles that were related to study results. The past year was devoted to manuscript preparation. The PI was locally deployed from Feb 2015- Aug 2015. During this time, the PI was able to work on the manuscript and prepare for publication in between mission requirements. The research coordinator position was no longer funded and Ms. Simpson was removed from the study in May 2015. This removal did not affect the completion of the manuscript.

Relationship of current findings to previous findings:

Enlisted medics are the first to deploy in a moment's notice to care for warriors. We sought to understand the medics' experience caring for female warriors in deployed settings. The key to integrating women fully into today's military relies on convenient gender-specific healthcare. One of the keys to the success is medic healthcare education that optimizes performance in the most austere settings for all service members basic and primary care needs. Medics described their experiences with pride and a deep sense of accomplishment for the excellent care they have provided. They have implemented programs and delivered healthcare in resource constrained environments that would be a challenge for any health care provider. The medics utilized

innovative techniques to anticipate need, provide care, and educate on the gynecologic health needs of women.

By showing women graphic pictures of sexually transmitted infections, medics believed they deterred unhealthy behaviors, such as unsafe sexual practices. Experts have repeatedly recommended the need for pre-deployment lessons for hygiene, sexually transmitted infection education, and genitourinary issues (Naclerio, Stola, Trego, & Flaherty, 2011; Goyal, Mattocks, & Sadler, 2012), education topics that medics can be trained to teach. These education topics have been credited for the improvement of the health of women in deployed settings (Armed Forces Health Surveillance Center, 2014). One option, medics can reinforce reliable health resources such as the "Women's Health Portal: Deployment Health for Women" (U.S. Army Medical Department: Army Public Health Center). Agazio and Buckley (2010) reported that healthcare professionals, such as medics, who assisted women with strategies to embrace health promoting behaviors enhanced women's self-efficacy, a critical element in maintain a healthy force.

Study participants listed complicated health concerns in their deployed clinic, such as early pregnancy, ectopic pregnancy and pelvic inflammatory disease, which is unusual based on the literature. Women's health concerns in previous studies were urinary frequency, unable to hold urine, dysuria, urinary incontinence, vaginal discharge, vaginal spotting/bleeding, amenorrhea, menstrual headaches, breast tenderness, and mood swings (Wilson & Nelson, 2012; Lowe & Ryan-Wenger, 2003; Thomson & Nielsen, 2006). Many of these conditions could be managed by competent medics after a privileged provider's diagnosis with plan of care and under a preceptor's supervision (Kellermann, Saultz, Mehrotra, Jones, Dalal, 2013). Hurd and colleagues (2013) reported that even though chronic health conditions were less prevalent on board ship, IDCs need preparation to diagnose and treat chronic diseases to include women's health conditions, including cervical dysplasia. Women chose not to seek the advice from IDCs regarding their abnormal Pap smear results, which critically delayed necessary follow-up and placed their health at risk (L. Braun, oral communication, February 2015).

Male medics raised the issue of their gender as an impediment to women seeking care. Since this is the first study of enlisted medics providing women's health services, there was no previous report found. Researchers stated women were uncomfortable with seeking care from a medic due to their lack of training, regardless of gender (Wilson & Nelson, 2012; Low & Ryan-Wenger, 2003). Authors reported between 45% (Makam, Mallappa, & Edwards, 2010) to 60% (Buck & Littleton, 2014) of women preferred female gynecologists. However, the patient-provider relationship and quality communication were paramount to determining a patient's preference in a provider rather than gender (Buck & Littleton, 2014). Medics, particularly male medics, were keenly aware of the need for professional interactions on- and off-duty to make them approachable to their patient population.

The medics from this study described many of the same impediments to delivering healthcare that women raised in previous studies (Wilson & Nelson, 2012; Thomson & Nielsen, 2006), such as limited transportation, laboratory, equipment and supplies. Forward deployed gynecologic care prevented the "woman-power" drain by providing a gynecologist at echelon III settings (Farley, Alexander, Zahn, Harrison, Nielsen, et al, 2006). This resource would be ideal for

medics stationed at echelon I and II settings by offering nearby expert consultants. However, no participants consulted with echelon III women's health experts, which is concerning. Instead, they used available local resources and the Internet to research the patient's health complaint, then called their preceptors (typically not a women's health expert). Medics in this study defaulted to rapid transfer of female patients for manageable conditions removing many capable women and jeopardizing assigned mission sets. When a transfer was required to a higher echelon of care, one study reported women traveled an average 158 Km (range 0-658 Km) in a

warzone to receive gender specific care (Farley, Alexander, Zahn, Harrison, Nielsen, et al, 2006).

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Women's hygiene education and training standardization could aid in preventing a number of gynecological health issues faced by women in a deployed environment (Trego, 2012). The Subcommittee on Military Personnel (2014) directed the "Secretary of Defense to conduct an assessment on the gender specific health to enhance readiness for female members; educational programs; provide Clinical Practice Guidelines to establish a standardized level of care in a deployed environment; and ensure that all services have the ability to provide a minimum level of education and training to address the specific gender health needs of women in a deployed environment" (p. 136). Developing a primary diagnoses systematic list would assist medics in providing front line care and developing lesson plans. Further, industry leaders should update women's health specific decision making software specifically designed for medics (Bureau of Medicine and Surgery: Department of the Navy, n.d.). Self-diagnosis kits that are portable and all-inclusive with treatments for common female health conditions can assist women manage their health and guide medic care (Ryan-Wenger, Neal, Jones & Lowe, 2010.

Female patients from all military branches are encountering the same health concerns and issues with medical care. In a previous TSNRP study, Wilson and Nelson (2012) reported that females service members will reach back to home, seek peer counseling, self-treat, or delay care. The medics reported that younger female patients were diagnosed with bacterial vaginosis, urinary tract infection, dehydration, sexually transmitted diseases and pregnancy. Medics have noted that education should focus on the young enlisted service members to reduce the onset of acute illness and prevention against sexual transmitted infections and pregnancy. Medics feel that additional training within gynecology would help the medics foster rapport with female patients and reduce the chance of the female service members from requiring medevac to a higher echelon of care for uncomplicated diagnoses and treatment plans.

Limitations:

This study was limited by the timing of the interviews, which was after the medics' deployment. Recall could have altered events over time. However, a major strength of this study was its novelty: to the best of our knowledge, no other study has studied the military medic healthcare delivery for women.

Conclusion:

This paper described the medics' perspective of providing healthcare for women in a deployed or ship setting. While the advancement of women in the military continues to make strides, the availability of quality women's healthcare can be its defining limitation. Medics provide excellent healthcare, often in the most rugged conditions with limited education and training. Quality women's healthcare education within their scope of practice can be achieved to support

women as they forge new paths in forward deployed units. Teaching medics about women's healthcare in a stepwise fashion from basic education through sustainment training is needed. Medics are an excellent conduit for reinforcing healthy messages and, with guidelines, providing first line basic gynecologic care.

Significance of Study or Project Results to Military Nursing

This study showed medics needed more education on women's health. The medics described teaching moments and classes nurses led. Most of the training was unique to the setting or the individual medic need. It is recommended based on the results that nurses contact their local medic training facilitator and engage in this training.

Changes in Clinical Practice, Leadership, Management, Education, Policy, and/or Military Doctrine that Resulted from Study or Project

This study was a qualitative study that queried medics about managing women's health care in resource-constrained environments. According the COL (ret) Lori Trego, Military Women's Health Research Interest Group, health care training for the Army has been evolving due to the congressional mandate to include women in forward deployed settings. Otherwise no direct changes have been made to date based on these study results.

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Summary of Dissemination

Type of Dissemination	Citation	Date and Source of Approval for Public Release
Publications in Press	Military Medics' Insight into Providing Women's Healthcare in Austere Settings	Under review. Responding to comments from reviewers.
Podium Presentations	None	
Poster Presentations	None	
Other	None	

Reportable Outcomes

Reportable Outcome	Detailed Description
Applied for Patent	none
Issued a Patent	none
Developed a cell line	none
Developed a tissue or serum repository	none
Developed a data registry	none

Recruitment and Retention Table

Recruitment and Retention Aspect	Number of Subjects This Reporting Period	Total Number of Subjects Since Study or Project Began
Number of Subjects Projected in Grant Application	100	
Subjects Available	0	86
Subjects Contacted or Reached by Approved Recruitment Method		
Subjects Screened	0	86
Subjects Ineligible	0	0
Subjects Refused	0	0
Human Subjects Consented	0	86
Subjects Who Withdrew	0	0
Subjects Who Completed Study	0	86
Subjects With Complete Data	0	86
Subjects with Incomplete Data	0	0

Demographic Characteristics of the Sample

Characteristic	
Age (yrs)	34 ± 12
Women, n (%)	30 (35%)
Race: Not collected	
Military Service or Civilian	
Air Force, n (%)	17 (20%)
Army, n (%)	26 (30%)
Marine, n (%)	n/a
Navy, n (%)	42 (49%)
Coast Guard, n (%)	1 (.01%)
Service Component: Not collected	